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ABSTRACT

The purposes of this three-year federally funded program were twofold: first, to identify and establish a curriculum and program design which would build on the strengths of the young male child while it sought to help him overcome his weaknesses; and second, to attempt to discover or identify those teacher behaviors that produce the best results with boys. Thus, the thrust of the program reported here was the creation of a "male-oriented" environment in attitude, curriculum, and materials, while curricular concepts per se were not changed, the instructional media, activities, and classroom climate were considerably manipulated. Evaluation instruments were objective in design or were forms of standardized measurements; an evaluation of program objectives was made yearly, and a final evaluation summary is included in this document. (Author/SES)

ED 079654

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A Title III ESEA Program

FINAL EVALUATION SUMMARY

of

A MALE-ORIENTED PROGRAM FOR BOYS

Submitted: August, 1972

Shoreline School District No. 412
N.E. 158th and 20th Avenue N.E.
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CG 008 133

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A MALE-ORIENTED PROGRAM FOR BOYS

FINAL EVALUATION SUMMARY

DETAILED EVALUATION of 1971-72

Introduction

A three year field study of innovative nature was undertaken to attempt to identify specific or general environmental and instructional directions that would enhance the academic achievement and behavioral adjustment of boys in their early elementary school years.

An evaluation of objectives was completed yearly. From these yearly evaluations a final evaluation summary is herein.

A detailed evaluation of the third and final year, herein included, perhaps, serves as a level against possible "Hawthorne effects" of the first and second year.

It should be stressed that the Male-Oriented Program for Boys was a field study and, therefore, should not be considered a tightly-controlled experimental research design. Inferences to other populations should be made cautiously.

THIRD YEAR EVALUATION

STATISTICAL EVALUATION

The primary purpose of this innovative program was to help boys have a more successful elementary school experience, both in terms of academic achievement and school adjustment. In order to achieve this purpose and measure the effects of the program, the following six classes were formed.

1. A kindergarten all male group consisting of randomly assigned kindergarten age boys to a class instructed by a male teacher, experienced in kindergarten, and conducted with a "boy-oriented" curriculum and classroom environment. This class attempted to emphasize and build on the characteristics and strengths commonly found in male children--initiative, assertiveness, spatial and analytic ability. It was designed to develop areas of weakness such as verbal skills, large and small muscle coordination, and interest in school.

2. A kindergarten mixed group of comparable size to the all male group was formed. This group was randomly assigned from kindergarten age children, 18 boys and 15 girls, under the instruction of a male teacher, inexperienced in kindergarten. This class utilized the same "male-oriented" curriculum and environment as to activities, etc. as the all male room.

3. A first grade all male group consisting of boys from the all male kindergarten the prior year, under the instruction of a male teacher in his second year of first grade teaching. The goals, curriculum and environment were equivalent to those of the all male kindergarten group.

4. A regular first grade control group under the direction of an experienced female teacher. This class and curriculum were typical of first grade rooms throughout the district following the recommended curriculum and lacking the male-oriented classroom environment.

5. Two second grade classes of heterogenous grouping and under the instruction of two female teachers. Student who were in the original all male kindergarten during the year 1969-70, spent the 1970-71 year in the all male first grade were matched by achievement and age and equally distributed between the two classes. The two teachers differed in that one historically has had equal success with boys as with girls and the other more success with girls than boys. No attempt was made to manipulate the curriculum or room environment. (See Appendix B for class movement during the three year study.)

The effects of each of these six classes were evaluated in relation to their progress towards pre-stated objectives. The objectives are stated below. It was hypothesized that:

1. Boys in the male-oriented classes will show more interest in attending school than boys in the nonmale-oriented classrooms.

2. Boys in the male-oriented classes will show more interest in academic subjects than boys in the nonmale environment.

3. Boys in the male-oriented classes will show academic skills as measured on standardized tests at least as great as boys in the nonmale-oriented classrooms.

4. Boys in the male-oriented classes will demonstrate a greater verbal fluency than boys in the nonmale-oriented classes.

5. Boys in the male-oriented classes will show more growth in ability to use large and small muscles than boys in the nonmale-oriented classrooms.

6. Factors will be isolated which differentiate characteristics of teachers who have equal success with boys and girls from those who have more success with girls.

The remainder of this evaluation deals with final summary conclusions and a detailed data analysis of the third year.

INTEREST IN SCHOOL

One of the primary goals of this program was to increase the interest of boys in attending school and objective "A-1" attempted to obtain and evaluate this goal. A questionnaire was developed and sent to all parents with boys in the program (see Appendix A). This questionnaire consisted of items investigating the child's interest in the program as perceived by his parents and was developed around his activities at home and stated interest in school.

Kindergarten Results

Approximately 85% of the kindergarten parents felt that the classroom program their son was involved in was either "better" or "far better" than most. Students from both classes reported to their parents at least three times a week and practically no reluctance was noted by the parents in their child's willingness to attend school. The only difference between the two kindergarten classes was that the all male class seemed more eager to attend school.

Parents of both groups felt their boys spend more time drawing, watching television, building things, and contacting friends than they do playing ball, cutting and pasting or being read to. The all male class seemed to watch more television and enjoyed being read to more than the control class. The control class spent more time in initiating contact and activities with friends. In listing other activities in which their boys participated, the all male class parents most frequently mentioned building things, doing chores, reading and riding bikes. The control class parents listed listerning to music, playing with toys, doing chores and making believe.

When parents were asked to list up to five activities or projects which their son had participated in at school, parents of the control group emphasized building things, art, science, gym and music. The all male class parents were very similar in their responses listing art, building things, gym and reading. These results indicate that there was little difference in the attitudes of these two classes and that the boys emphasized and enjoyed practically the same things.

First Grade Results

Parents of the boys in the first grade all male class had a more favorable attitude towards their child's classroom program than did parents from the control class. However, their boys reported to them at approximately equal frequency and both classes showed a high eagerness to attend school. Both groups of boys spend a majority of their time initiating contact and activities with friends. The control males spend more time than the all male class being read to while the all male class enjoys building or putting things together.

The activities which the all male group parents mentioned as their child most frequently participating in included riding bikes, sports, listening to the radio and singing. Control males also enjoy riding their bike and reading but they also spend more time playing games and listening to music. The activity that the parents of both groups most frequently mentioned as their child participating in was the school Christmas program.

ACADEMIC SKILLS

Objective "A-2" had as its goal the investigation of differences in academic skills which may occur between the classes as a result of the different programs. To measure this objective, the Wide Range Achievement Test and the Metropolitan Readiness Test were administered to the kindergarten classes. The first grade boys also took the Wide Range Achievement Test plus the Metropolitan Achievement Test. It is in relation to these three standardized instruments that this objective was evaluated.

Wide Range Achievement Test (WRAT)

This instrument was first standardized in 1936 and revised in 1965 as a convenient tool for the study of the school subjects of reading, written spelling and arithmetic computation. The method of measuring the basic subjects was chosen to achieve the following ends: (1) to study the sensory-motor skills involved in learning to read, spell and figure; (2) to provide simple and homogeneous content; (3) to avoid duplication and overlapping with tests of comprehension, judgment, reasoning and generalization studied by means other than reading, spelling and arithmetic.

The revised edition of the WRAT takes approximately 25 minutes to administer and includes the following three subtests:

1. Reading: recognizing and naming letters and pronouncing words.
2. Spelling: copying marks resembling letters, writing the name and single words dictation.
3. Arithmetic: counting, reading numbers, solving oral problems and performing written compositions.

The WRAT more than adequately satisfies the statistical conditions of reliability. Numerous population groups of different degrees of homogeneity have been studied by the

authors during the last twenty years. The obtained reliability coefficients ranged from .92 to .98 for the reading and spelling tests and from .85 to .92 for the arithmetic test. Tables I, II, III, IV, V, and VI show the results of the analysis of variance comparing the two kindergarten and two first grade classes on each of the WRAT subtests.

Significant differences were obtained between the two kindergarten groups on all three subtests. On the reading subtest the all male class had a mean of 108.5 which was 9.8 standard score points higher than the control group mean of 98.7. The all male class had means of 105.7 and 112.6 on the spelling and arithmetic subtests respectively, while the control class had means of 92.9 and 96.8. These differences between the two classes are highly significant with the achievement level of the all male class being superior. These kindergarten results are further clarified in Figure I.

Only one significant difference was noted at the first grade level and that was on the reading subtest where the control class had a mean of 130.4 and the all male class had a mean of 113.5. This result is in sharp contrast to those obtained above where the all male class performed significantly higher on the reading test than did the control class. Although the first grade classes did not differ significantly on the spelling or arithmetic subtests, the control class did have higher mean scores in both instances. The first grade results are graphically compared in Figure II.

TABLE I
ANALYSIS OF VARIANCE COMPARING THE TWO KINDERGARTEN GROUPS ON THE READING SUBTEST OF THE WRAT

Source of Variation	Sum of Squares	d.f.	MS.	F
Treatment	1065.57	1	1065.57	14.73**
Within	3254.86	45	72.33	
Total	4320.43	46		

** F of 14.73 (1,45) has probability less than .01

TABLE II
ANALYSIS OF VARIANCE COMPARING THE TWO KINDERGARTEN GROUPS ON THE SPELLING SUBTEST OF THE WRAT

Source of Variation	Sum of Squares	d.f.	M.S.	F
Treatment	1804.13	1	1804.13	16.38**
Within	4955.15	45	110.11	
Total	6759.28	46		

**F of 16.38 (1,45) has probability less than .01

TABLE III
ANALYSIS OF VARIANCE COMPARING THE TWO KINDERGARTEN GROUPS ON THE ARITHMETIC SUBTEST OF THE WRAT

Source of Variation	Sum of Squares	d.f.	M.S.	F
Treatment	2756.08	1	2756.08	25.96**
Within	4777.54	45	106.17	
Total	7533.62	46		

**Fof 25.96 (1,45) has probability less than .01

TABLE IV
ANALYSIS OF VARIANCE COMPARING THE TWO FIRST GRADE GROUPS ON THE READING SUBTEST OF THE WRAT

Source of Variation	Sum of Squares	d.f.	M.S.	F
Treatment	2900.96	1	2900.96	9.00**
Within	12,565.92	39	322.20	
Total	15,466.88	40		

**F of 9.00 (1,39) has probability less than .01

TABLE V

ANALYSIS OF VARIANCE COMPARING THE TWO FIRST GRADE GROUPS ON THE SPELLING SUBTEST OF THE WRAT

Source of Variation	Sum of Squares	d.f.	M.S.	F
Treatment	168.23	1	168.23	1.45 **
Within	4535.53	39	116.30	
Total	4703.76	40		

**F of 1.45 (1,39) has probability greater than .05

TABLE VI

ANALYSIS OF VARIANCE COMPARING THE TWO FIRST GRADE GROUPS ON THE ARITHMETIC SUBTEST OF THE WRAT

Source of Variation	Sum of Squares	d.f.	M.S.	F
Treatment	335.26	1	335.26	3.69 **
Within	3539.72	39	90.76	
Total	3874.98	40		

** F of 3.69 (1,39) has probability greater than .05

FIGURE I
GRAPHIC COMPARISON OF THE TWO KINDERGARTEN CLASSES ON THE WRAT SUBTESTS

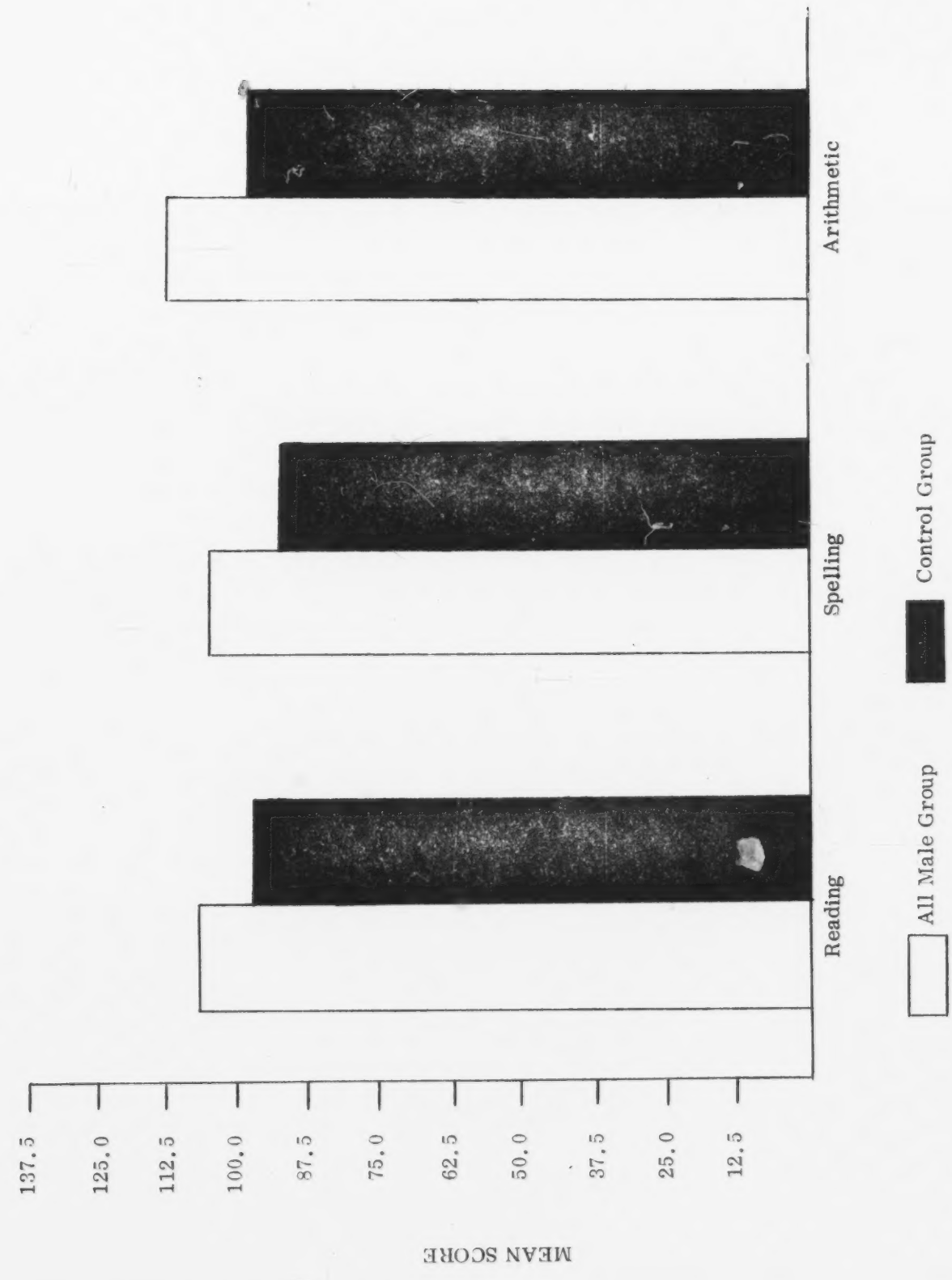
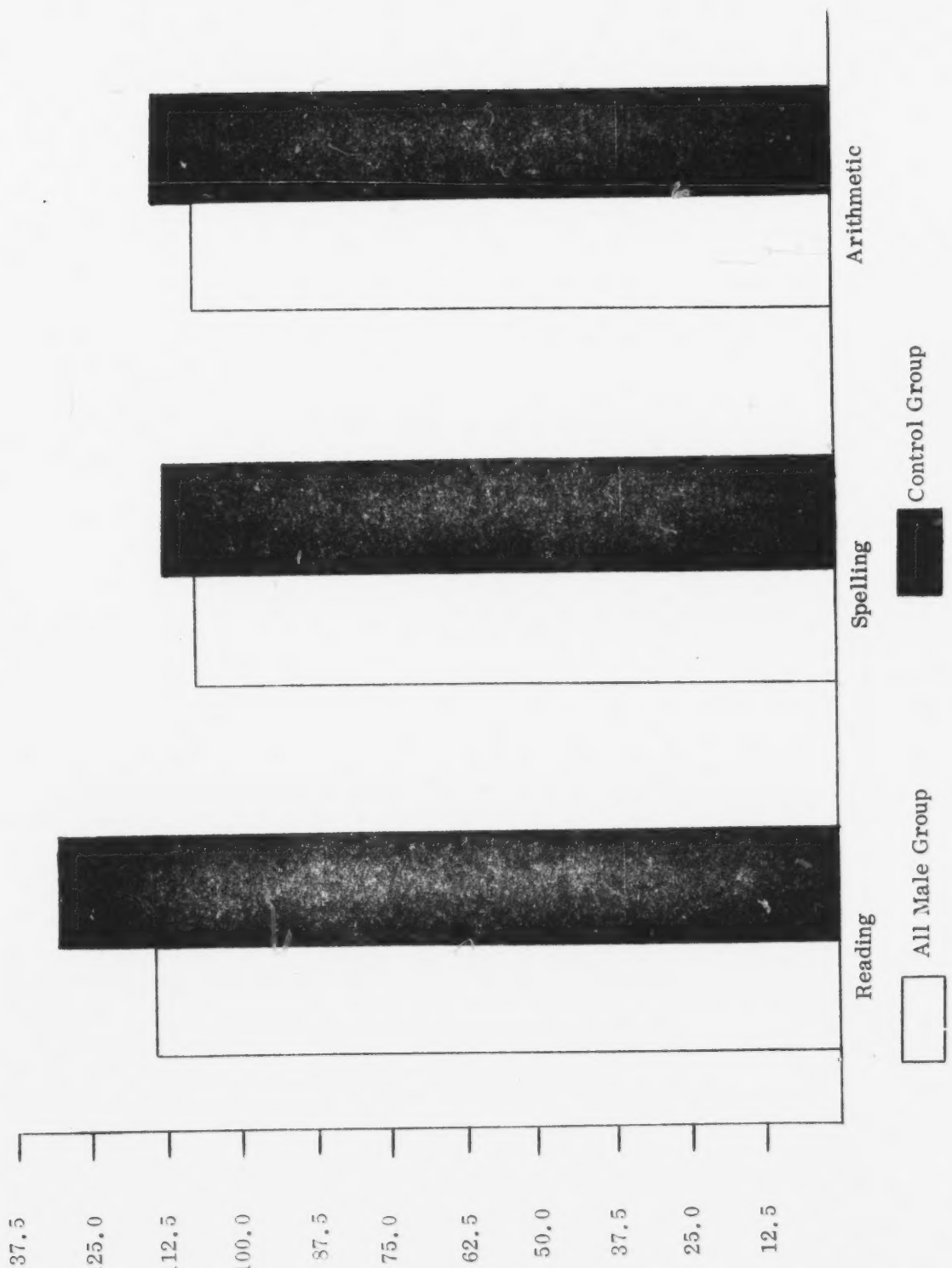


FIGURE II
GRAPHIC COMPARISON OF THE TWO FIRST GRADE GROUPS ON THE WRAT SUBTESTS



Second Grade Results

The boys who had participated in the All Male Program during their kindergarten and first grade years were administered the Wide Range Achievement Test during the spring of the second grade. These boys had been randomly assigned to one of two teachers. One of these teachers was identified as a male success teacher (MSG), while the other was identified as a female success teacher (FSG). Both of these classes consisted of a mixture of boys and girls and a typical second grade classroom and curriculum.

On the reading subtest of the WRAT, the girls had a mean of 121 while the boys had a standard score mean of 113. This result indicates that the girls performed at a significantly higher level of achievement on this subtest. It was also noted that the girls had a standard score mean approximately five points higher than the boys on the spelling subtest but no differences were noted between the two groups on arithmetic.

Boys who were in the MSG class performed significantly higher on all three subtests than did boys in the FSG class, while little difference was noted between girls in the two different classes. The boys in the MSG class perform d at the 91st, 68th and 50th percentiles on the reading, spelling and arithmetic subtests respectively. The boys who were in the FSG class performed at the 68th percentile in reading, 50th percentile in spelling and 27th percentile in arithmetic and, thus, were substantially lower than the boys who had the male success teacher. Without exception, the girls in both of these two classes were above the 50th percentile on all three subtests but no differences were noted as to whether they had a MSG or a FSG teacher.

Metropolitan Readiness Test

This standardized readiness test has established norms based on a nationwide sample of more than 15,000 public school children tested during the first month of the first grade. Median reliability coefficients, based on retests with parallel forms over intervals of a few days are reported as .83 for reading readiness and .89 for total readiness. The subtests included within this instrument are listed below.

1. Word Knowledge - selecting pictures that correspond to words
2. Understanding of and response to oral directions - selecting pictures in response to sentences - long directions, involving sustained attention
3. Information - same as number two above, but more elaborate, involving vocabulary and names of common objects
4. Matching - visual perception involving selection of pairs of identical pictures of common objects
5. Knowledge of numbers
6. Copying

As shown in Table VII, no significant difference was found between the two kindergarten classes on the total readiness score. The means for the all male group and the control class were 66.5 and 63.6 respectively. These results differ slightly from that obtained on the WRAT where the all male class had the highest level of performance. It should be noted, however, that the all male class had a higher mean score on each of the six subtests but these differences failed to reach significance. These results would indicate that the all male class performed at a higher achievement level but both classes were equal in their readiness for first grade. Both classes performed above the 65th percentile nationally on the readiness test.

TABLE VIII
ANALYSIS OF VARIANCE COMPARING THE TWO FIRST GRADE CLASSES
ON THE WORD KNOWLEDGE SUBTEST OF THE MAT

Source of Variation	Sum of Squares	d.f.	M.S.	F
Treatment	35.93	1	35.93	1.57**
Within	849.04	37	22.95	
Total	884.97	38		

**F of 1.57 (1,37) has probability greater than .05

TABLE IX
ANALYSIS OF VARIANCE COMPARING THE TWO FIRST GRADE CLASSES
ON THE WORD ANALYSIS SUBTEST OF THE MAT

Source of Variation	Sum of Squares	d.f.	M.S.	F
Treatment	89.77	1	89.88	3.76**
Within	883.56	37	23.88	
Total	973.44	38		

**F of 3.79 (1,37) has probability greater than .05

TABLE X
ANALYSIS OF VARIANCE COMPARING THE TWO FIRST GRADE CLASSES
ON THE READING SUBTEST OF THE MAT

Source of Variation	Sum of Squares	d.f.	M.S.	F
Treatment	158.61	1	158.61	1.35**
Within	4343.39	37	117.39	
Total	4502.00	38		

** F of 1.35 (1,37) has probability greater than .05

TABLE XI
ANALYSIS OF VARIANCE COMPARING THE TWO FIRST GRADE GROUPS
ON THE ARITHMETIC SUBTEST OF THE MAT

Source of Variation	Sum of Squares	d.f.	M.S.	F
Treatment	.05	1	.05	.00**
Within	1765.69	37	47.72	
Total	1765.74	38		

**F of .00 (1,37) has probability greater than .05

VERBAL FLUENCY

Objective "A-3" was concerned with the amount of oral participation fostered in each of the two first grade classes. In order to measure this objective, each boy in the two classes was individually shown the same picture and asked to tell a story about or explain what was happening. The students were then evaluated on the number of words given in their story and the type of initial response made. The initial response was recorded as being either interpretative, descriptive or neutral.

The two classes were compared by an analysis of variance on the length of their stories and the results are shown in Table XII. As can be noted from this table, there was no significant difference between the two classes. The all male class had a mean of 59 which was slightly above the control mean of 54.2. Approximately 62 percent of the initial responses made by the all male class were interpretive and 24 percent were descriptive. The control class had 55 and 35 percent initial interpretive and descriptive responses respectively. These results would indicate that although there is no significant difference in the number of words in their stories, the all male class may produce stories on a somewhat higher cognitive level than the control class.

TABLE XII
ANALYSIS OF VARIANCE COMPARING THE TWO FIRST GRADE CLASSES ON THE NUMBER OF WORDS GIVEN IN A STORY

Source of Variance	Sum of Squares	d.f.	M.S.	F
Treatment	240.96	1	240.96	.26**
Within	36,406.55	39	933.50	
Total	36,647.51	40		

**F of .26 (1,39) has probability greater than .05

MUSCULAR ABILITY

Objective "A-6" was concerned with the ability to use both small and large muscles. To measure the ability to use small muscles, the Frostig Developmental Test of Visual Perception was administered to all males in the two kindergarten and first grade classes. This test measures the five visual-perceptual abilities that seem to have the greatest academic development. The five abilities are: (1) eye-motor coordination, (2) figure-ground perception, (3) form constancy, (4) perception of position in space, and (5) perception of spatial relationships. A brief description of the five subtests and the performance of the two kindergarten and first grade classes is given below. The subtest descriptions were taken from Teacher's Guide for the Frostig Program of Visual Perception.

Visual-Motor Coordination

Activities covered in this subtest are important because well directed eye movements are a prerequisite for reading and most other school work, especially writing. Visual-motor coordination is the ability to coordinate vision with movements of the body or with movements of a part or parts of the body. In such everyday activities as getting dressed, making a bed, carrying a tray, entering a car, or sitting down at the table, the eyes and the whole body work together. The smooth accomplishment of nearly every action depends upon adequate visual-motor coordination.

A child with defective or poorly developed visual-motor coordination is handicapped in trying to adjust to the varied demands of his environment. He may be able to dress himself or to perform the simplest household chores without clumsiness or complete failure; he will probably be unable to match his schoolmates in sports and games; and the nonacademic

skills required by his school curriculum, such as cutting, pasting and drawing are likely to prove extremely difficult for him. Though his academic learning may be less affected by a disability in the visual-motor area than by disabilities in other areas of visual perception, he certainly will have difficulty in learning to write. The results of the analysis of variance comparing the four classes on this perceptual area are shown in Tables XIII and XIV.

TABLE XIII
ANALYSIS OF VARIANCE COMPARING THE TWO KINDERGARTEN CLASSROOMS ON VISUAL-MOTOR COORDINATION

Source of Variation	Sum of Squares	d.f.	M.S.	F
Treatment	121.05	1	121.05	2.41 **
Within	1955.19	39	50.13	
Total	2076.24	40		

**F of 2.41 (1,39) has probability greater than .05

TABLE XIV
ANALYSIS OF VARIANCE COMPARING THE TWO FIRST GRADE CLASSES ON VISUAL MOTOR COORDINATION

Source of Variation	Sum of Squares	d.f.	M.S.	F
Treatment	.72	1	.72	.12 **
Within	195.85	33	5.93	
Total	196.57	34		

**F of .12 (1,33) has probability greater than .05

The results of the analysis of variance indicate that there were no significant differences between either the two kindergarten or two first grade classes. The kindergarten all male and control classes had means of 7.04 and 10.53. Means of 11.32 and 11.62 were obtained

by the first grade all male and control classes respectively. Thus, although no significant differences were found, the control groups performed better at both grade levels.

Figure-Ground Perception

A child with poor figure-ground discrimination characteristically appears to be inattentive and disorganized. This is because his attention tends to jump to any stimulus that intrudes upon him no matter how irrelevant it may be to what he is doing. Alternatively, his difficulty in screening out obtrusive stimuli may prevent him from separating himself from a particular stimulus, even though he ought to shift his attention to some other figure for purposeful activity. A child with this symptom is said to be stimulus bound. Tables XV and XVI below give the analysis of variance results on this subtest for the two grade levels.

The ability to distinguish figure from ground is necessary for the analysis and synthesis of words, phrases, and paragraphs, without which it is impossible to learn to read. Stimuli selected by the perceiver, whether they be auditory, tactile, olfactory, or visual, form the figure in the person's perceptual field, while the majority of stimuli form a dimly perceived ground. For instance, a little girl bouncing and catching a ball in a play yard has her attention directed to the ball, which is the figure in the scene she perceives. Since other features of the play yard are not the focus of her attention, they form the dimly perceived ground, of which she is probably only sufficiently aware to avoid colliding with them.

TABLE XV
ANALYSIS OF VARIANCE COMPARING THE TWO KINDERGARTEN CLASSROOMS ON FIGURE-GROUND PERCEPTION

Source of Variation	Sum of Squares	d.f.	M.S.	F
Treatment	11.63	1	11.63	2.02 **
Within	225.15	39	5.77	
Total	236.78	40		

**F of 2.02 (1,39) has probability greater than .05

TABLE XVI
ANALYSIS OF VARIANCE COMPARING THE TWO FIRST GRADE CLASSROOMS ON FIGURE-GROUND PERCEPTION

Source of Variation	Sum of Squares	d.f.	M.S.	F
Treatment	6.19	1	6.19	1.67**
Within	144.55	33	3.71	
Total	150.74	34		

**F of 1.67 (1,33) has probability greater than .05

No significant differences were found between either the kindergarten or first grade classes. The all male kindergarten class has a slightly higher mean score than the control class while the first grade control class was higher than the male class. These kindergarten results are not consistent with those obtained on visual-motor coordination where the control class had a higher level of performance. The first grade control class, however, did better in both instances. Means for the all male and kindergarten control classes were 11.38 and 10.29 respectively, while the first grade male class had a mean of 10.59 and the control males a mean of 11.46.

Perceptual Constancy

Perceptual constancy is the ability to perceive an object as possessing invariant properties such as shape, position, and size, in spite of the variability of the impression on the sensory surface. This means that where constancy of shape is concerned, two and three dimensional forms are recognized as belonging to certain categories of shapes, whatever their size, color, texture, node of representation, or the angle seen by the perceiver. Three aspects of objects besides shape that may be visually perceived as constant are size, brightness, and color.

Adequate perception of shape and size is essential if the child's physical surroundings are to appear relatively stable and predictable to him. A child with poorly developed shape and size constancy is not only likely to be made anxious by the general unreliability of appearances in his world, but he will also have major difficulties in academic learning. Although he may learn to recognize a number, letter or word when he sees it in a particular form or content, he may be quite unable to recognize the same symbol when it is presented in a different manner. The results of the six classes on this subtest are shown in Tables XVII and XVIII below.

TABLE XVII
ANALYSIS OF VARIANCE COMPARING THE TWO KINDERGARTEN CLASSROOMS ON PERCEPTUAL CONSTANCY

Source of Variation	Sum of Squares	d.f.	M.S.	F
Treatment	.90	1	.90	.14 **
Within	257.10	39	6.59	
Total	258.00	40		

**F of .14 (1,39) has probability greater than .05

TABLE XVIII
ANALYSIS OF VARIANCE COMPARING THE TWO FIRST GRADE CLASSROOMS ON PERCEPTUAL CONSTANCY

Source of Variation	Sum of Squares	d.f.	M.S.	F
Treatment	18.64	1	18.64	4.33**
Within	142.05	33	4.30	
Total	160.69	34		

**F of 4.33 (1,33) has probability less than .05

No significant difference was found between the two kindergarten classes. The all male class had a mean of 12.13 while the control class had a mean of 11.82. These results are consistent with those obtained on figure-ground perception. A significant difference was found between the two first grade groups. The control males had a mean of 12.69 which was significantly higher than the male class mean of 10.59. This first grade result is in the same direction as that obtained on the other two subtests where the control class had a higher level of performance.

Perception of Position in Space

Perception of position in space is defined as perception of the relationship of an object to the observer with a person being the center of his own world and perceiving objects as being behind, before, above, below, or to the side of himself. This type of perception is utilized in recognizing the sequence of letters in a word and the sequence of words in a sentence. Difficulties for a child in this area would become most apparent when he is faced with his first academic tasks because letters, words, phrases, numbers, and pictures appear to him distorted and confusing. The results of the analysis of variance comparing the six classes on this perceptual area are shown in Tables XIX and XX.

TABLE XIX
ANALYSIS OF VARIANCE COMPARING THE TWO KINDERGARTEN CLASSES ON PERCEPTION OF POSITION IN SPACE

Source of Variation	Sum of Squares	d.f.	M.S.	F
Treatment	12.27	1	12.27	2.28 **
Within	209.68	39	5.38	
Total	221.95	40		

**F of 2.28 (1,39) has probability greater than .05

TABLE XX

ANALYSIS OF VARIANCE COMPARING THE TWO FIRST GRADE CLASSES ON PERCEPTION OF POSITION IN SPACE

Source of Variation	Sum of Squares	d.f.	M.S.	F
Treatment	.20	1	.29	.11**
Within	83.60	33	2.53	
Total	83.89	34		

** F of .11 (1,33) has probability greater than .05

No significant differences were found between either the two kindergarten or first grade classes on perception of position in space. At the kindergarten level the all male and control group had means of 12.89 and 11.76 respectively. The first grade all male class had a mean of 11.27 while the control class mean was 11.46. Thus, at the kindergarten level the all male class had the highest level of performance while the opposite was true at the first grade level.

Perception of Spatial Relationships

The subtest measures the ability of an observer to perceive the position of two or more objects in relation to himself and in relation to each other. For example, a child stringing beads has to perceive the position of the bead and the string in relation to himself as well as the position of the bead and string in relation to each other.

Disabilities in the perception of spatial relationships inevitably lead to difficulties in academic learning. They may make the proper perception of the sequence of letters in a word impossible so that a child may read the word string as stirring or spell it sitnrg. In attempting to solve arithmetic problems, he may be unable to remember the sequence of processes involved in problems of long division or fail to perceive the relative position of the digits in problems of multiplication. Tables XXI and XXII below give the analysis of variance results on this subtest for the two grade levels.

TABLE XXI
ANALYSIS OF VARIANCE COMPARING THE TWO KINDERGARTEN CLASSES ON PERCEPTION OF SPATIAL RELATIONSHIPS

Source of Variation	Sum of Squares	d.f.	M.S.	F
Treatment	3.47	1	3.47	1.68 **
Within	80.73	39	2.07	
Total	84.20	40		

** F of 1.68 (1,39) has probability greater than .05

TABLE XXII
ANALYSIS OF VARIANCE COMPARING THE TWO FIRST GRADE CLASSES ON PERCEPTION OF SPATIAL RELATIONSHIPS

Source of Variation	Sum of Squares	d.f.	M.S.	F
Treatment	2.10	1	2.10	2.66 **
Within	26.19	33	.79	
Total	28.29	34		

** F of 2.66 (1,33) has probability greater than .05

The all male kindergarten class scored slightly higher than the control class while at the first grade level the control class was again higher. None of the differences, however, were significant. The means for the kindergarten all male and control classes were 11.71 and 11.12 respectively. At the first grade level the all male class had a mean of 11.95 while the control males had a mean of 11.71. These results are consistent with those obtained on the other subtests.

Total Test Battery

Shown in Figure IV is a graphic comparison of the two kindergarten classes on all five subtests. As can be noted from this graph, the all male group had the highest level of performance on four of the five subtests. The only test on which the all male class was

lower was visual-motor coordination. The all male class had a mean of 59.75 on the total test battery which was 4.22 mean score points higher than the control class. It should be noted that the differences between these two groups on both the subtests and total battery are not significant and both classes can be considered as equal in their small muscle coordination.

Figure V shows the same comparisons for the two first grade classes. As can be noted from the graph, the control class had a higher level of performance on all five subtests which is in reverse to those obtained at a kindergarten level. The control class had a total battery mean of 59.54 which was 3.22 mean score points higher than the all male class mean of 56.32. This total difference was not, however, significant. The only subtest on which these two classes differed significantly was form constancy.

FIGURE IV
GRAPHIC COMPARISON OF THE TWO KINDERGARTEN CLASSES
ON THE FIVE FROSTIG SUBTESTS

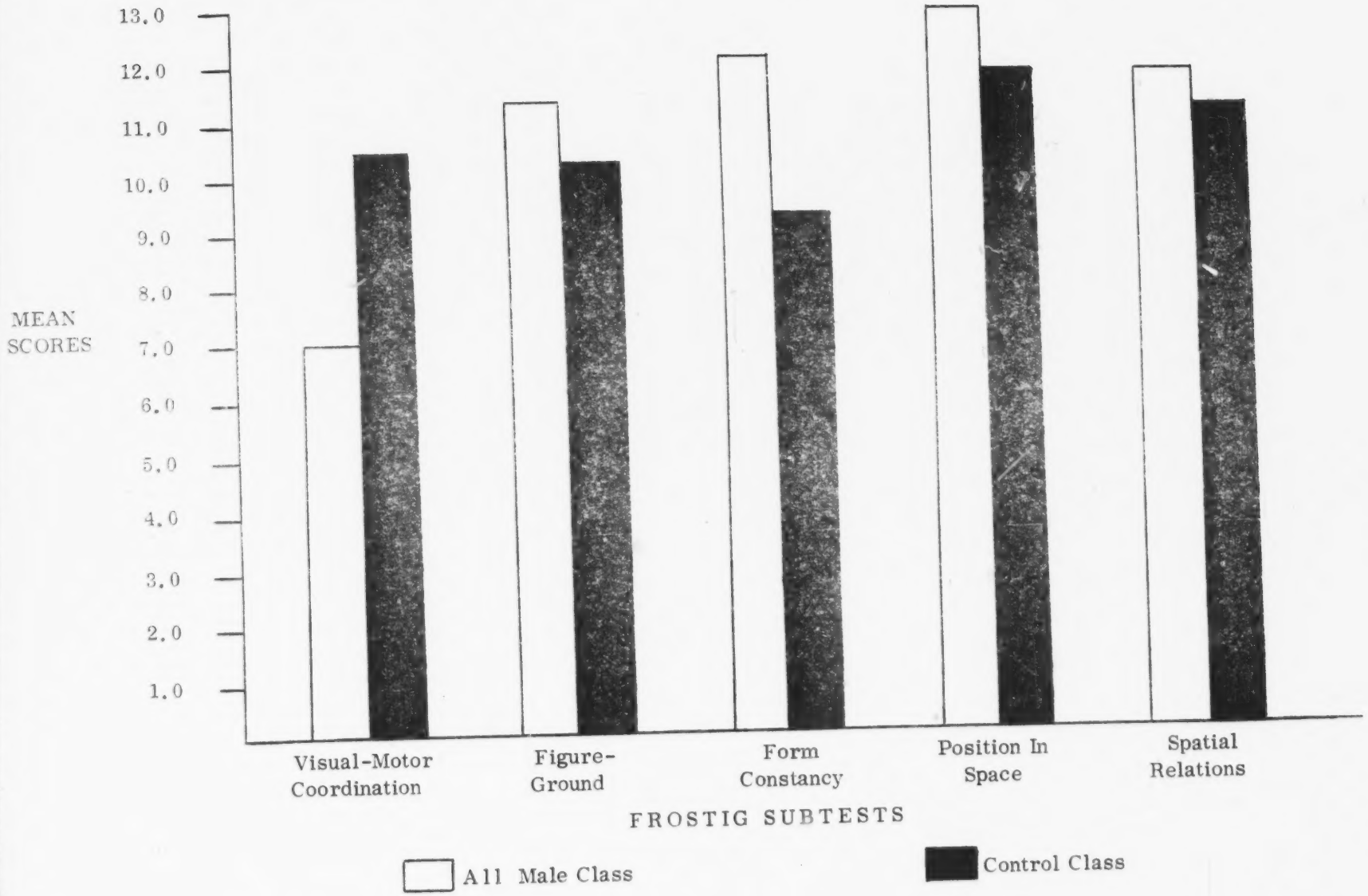
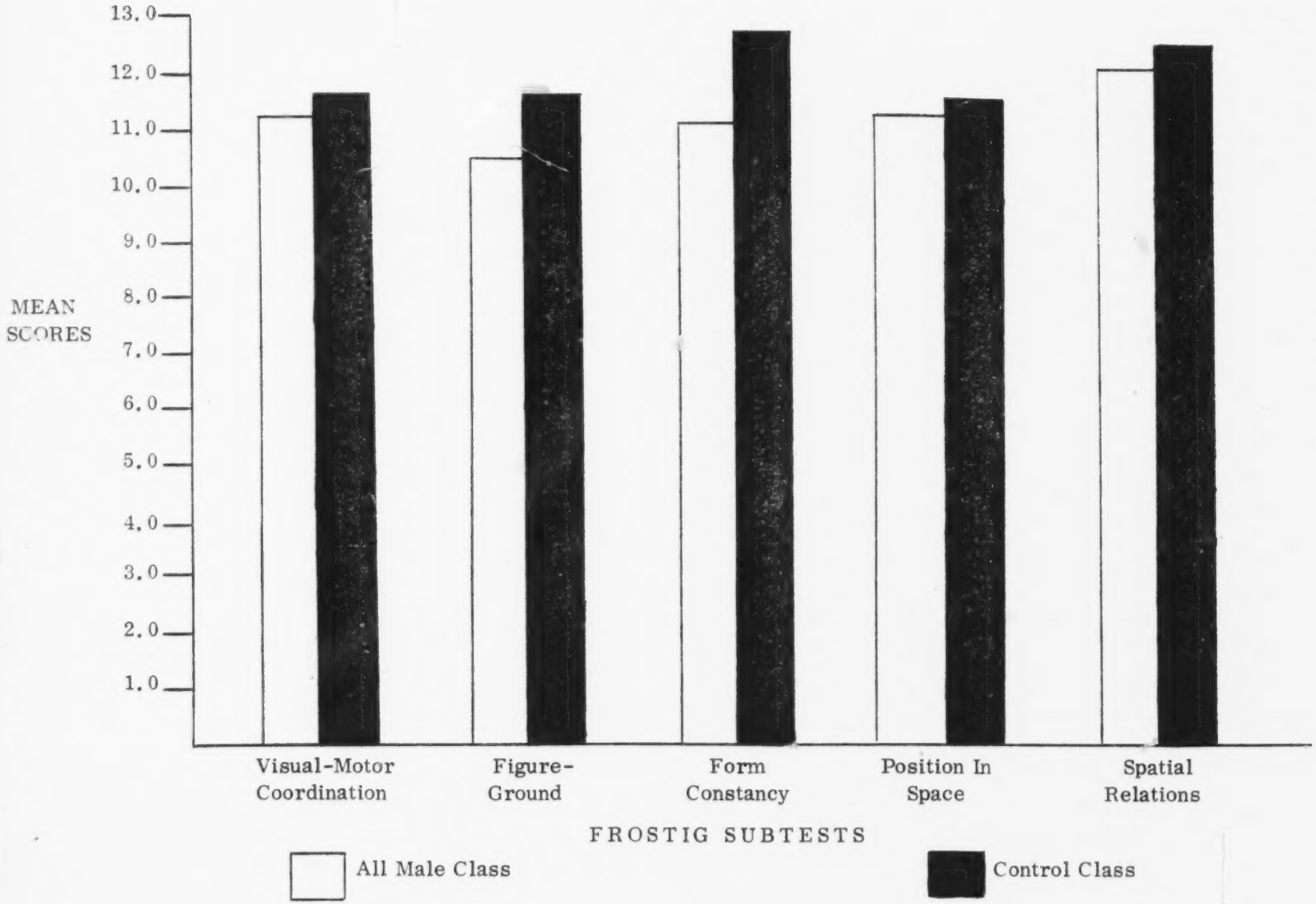


FIGURE V
GRAPHIC COMPARISON OF THE TWO FIRST GRADE CLASSES
ON THE FIVE FROSTIG SUBTESTS



Large Muscle Coordination

A second goal of objective "A-6" was to foster more growth in ability to use large muscles. In order to measure the extent to which this objective was achieved, the Washington Elementary School Physical Fitness Test was administered. Each of the boys in the two first grade classes were measured in their ability to do a standing broadjump, bench push-ups and curl-ups.

The standing broadjump is used to measure the student's power. In executing the jump, the student assumes a squat position with his arms extended backward and with his toes of both feet parallel to and in back of a starting tape. The student starts the jump by shifting his arms forward and upward. As soon as his feet leave the floor he flexes his legs and continues to swing his arms forward and lands with feet parallel, trunk flexed and arms extended in a forward direction.

The average performance of boys in the first grade is a broadjump of 39 inches. In the all male class, all but one student was able to achieve this standard and this boy only jumped 36 inches. This level of performance is almost identical to that of the control class. The all male and control classes had means of 47.4 and 47.1 respectively. These results indicate that both classes were equal in their performance but they both performed significantly above the mean expectation for boys in the first grade.

Curl-ups measure the strength and endurance of the trunk flexor muscles. The student assumes a back lying position with knees bent, soles of the feet flat on the floor and fingers laced behind the head. The tester places his right hand on the pupil's feet, holding them down and close to the buttocks, while the left hand is placed across the top of the pupil's knees. The

student sits up, touches the tester's hand and returns to the starting position.

Each of the boys in the two classes were measured on the number of curl-ups they could successfully complete. The control males had a mean score of 10.4 while the average performance of the all male class was significantly higher with a mean of 21.4. Both of these means were higher than the expected performance of seven for this age group. These results indicate that although there was no difference between the two classes in their power, the all male class demonstrated significantly more strength and endurance of the trunk flexor muscles.

Bench push-ups measure the strength and endurance of the forearm, arm, and shoulder girdle muscles. The student is required to grasp the nearest corners of a chair and assume a front leaning position with legs together and both feet on a mat. He then lowers his body and flexes at the elbows until his chest touches the nearer edge of the chair. Arms are then extended to the starting position.

Average performance for first grade boys on bench push-ups is 14 and the control males fell short of this level with a mean of 11.8. The all male class had a mean of 18.5 which was significantly higher than the control class. These results would indicate that the boys in the all male classes had more overall strength and endurance in the large muscles than did the control males.

FACTORS HELPING BOYS

Objectives B1 and B2 were concerned with the discovery of factors which differentiate teachers who have equal success with boys and girls from those who have more success with girls. During the 1971-72 school year, intensive observations were made in two second grade and four fourth grade classrooms. Three of these classes, one second grade and two fourth grade, were designated male success groups (MSG) while the other three classes were called female success groups (FSG). These two groups were equally represented by male and female teachers.

Determination of whether or not a teacher was a MSG or FSG depended upon grades given for the first quarter of the 1971-72 school year. The grades given by the second and fourth grade teachers were analyzed in relation to higher grades being given to either boys or girls. The fourth grade male and female teachers who showed the greatest discrepancy in grades favoring the male students were identified as the male success group. The female success group was determined by the male and female teacher most strongly favoring girls in their grading. A MSG and FSG for the second grade was determined in the same manner as that for the fourth grade.

In order to evaluate differences in teaching techniques between teachers identified as successful with males (MSG) and females (FSG), the Teacher-Pupil Interaction Scale was used. This scale is designed to measure the effects of on-going teacher-pupil interaction. Although pupil activities will have some influence upon teacher's behavior, teachers generally follow a pre-arranged plan or lesson. To measure this interaction, which takes place between the teacher's and students' behavior, four categories for

pupil behavior and teacher behavior are defined yielding sixteen possible combinations.

Teacher Behavior

1. Instruction: makes explanation, talks to pupil, gives directions, asks questions, etc.

2. Reinforcing: dispenses praise, smiles, nods, makes physical contact by patting, touching, etc. -- dispenses material rewards.

3. Non-attending or Neutrals: withholding attention, sitting passively, attending to personal notes, working with other pupils, attending to activities which do not include the pupil being observed.

4. Disapproving: criticizing, correcting, admonishing, reproving, expressing generally negative feelings, statements.

Pupil Behavior

1. Attending: When receiving direction, the pupil maintains eye contact or heeds direction toward teacher/blackboard, etc. When performing seatwork, he attends to work. When teacher addresses him or his group, he attends.

2. Scanning Behavior: Pupil looks about the room, watches in communication, or walks about the room but does not attract the general attention of the class with noise or disturbances.

3. Social Contacts: The pupil teaches other children, engages in communication, or walks about the room but does not attract the general attention of the class with noise or disturbance.

4. Disruptive Behavior: The pupil calls attention to himself by behaviors which are audible/visible throughout the room, e.g., tapping with his pencil, throwing objects, shouting, etc.

Second Grade Comparisons

Over half (58%) of the second grade MSG teacher's time was spent in non-attending or neutral activities while the remaining time was spent in instruction. The second grade FSG spent approximately 70 percent of his time instructing while the remaining time was spent in non-attending or neutral behavior. These results indicate that the MSG

group spends approximately half as much time in instructional activities as compared to the FSG. Neither of the two groups spent any time in reinforcing or disapproving activities.

Exactly 84 percent of the student time in both the MSG and FSG was spent in attending and twelve percent was recorded as scanning behavior. The student spent only four percent of their time in social contacts and no disruptive behavior was noted. These results indicate that there was no difference in the student behavior of the male and female success groups.

The MSG classroom time is composed of the teacher instructing or being neutral while the students attend. The same result is noted for the FSG with a higher percentage of time being spent by the teacher on instructional activities. It should be noted that the student behavior in these two groups is the same but the teacher behavior differs with more time in the MSG being spent on non-attending or neutral activities.

Fourth Grade Comparisons

Only 36 percent of the fourth grade MSG teacher's time was spent in instruction activities while 36 percent was spent in non-attending or neutral activities. The FSG teachers spent 63 percent of their time in instruction and 35 percent in non-attending. These results are very similar to those obtained for the second grade teachers. Male success teachers spend more time in non-attending activities while female success teachers spend more time in straight instruction.

Student behavioral activities at the fourth grade level was almost identical to that of the second grade level. Approximately 80 percent of the student time was spent on attending while fifteen and five percent were spent on scanning and social contacts

respectively. Both the MSG and FSG students spent almost the same percentage of time in each of these activities.

As with the second grade MSG, the fourth grade MSG teacher spent the majority of his time in neutral activities or instructing while the students attended. However, the FSG group had far more instruction with the students attending than did the MSG. Because of the consistency of these results between the two grade levels, it may be safe to conclude that teachers who are successful with boys spend more of their time in a neutral role with the students. Teachers who are more successful with girls than boys spend more of their time in direct forms of teacher-led instruction.

Another factor which was investigated as having an effect on the success with boys andgirls was the number of reprimands and positive reinforcements given to boys as compared to girls. Each of the three MSG and FSG teachers were observed individually for three 20-minute periods. During these observations, records were kept as to the number of positive verbal, negative verbal, positive physical and negative physical approaches made to the students. More specifically, the responses made by the teacher towards the students were analyzed by the type of response and as to whether they were made to boys, girls or all students.

At the second grade level the MSG teacher used mainly verbal approaches (70%) towards the students. Of the positive verbal approaches, 55%, 36%, and 9% were made to boys, girls and total class respectively. The boys received more positive verbal approaches but they also received more negative comments than did the girls. The FSG used mainly negative verbal approaches towards the class (73%) with the majority of these being directed towards the class as a whole. The main difference between the MSG and FSG is in the number of physical approaches made. Only twelve percent of the

approaches made by the FSG teacher were physical while the MSG teacher had thirty percent in this category. The majority of these physical approaches by the MSG teacher were towards boys.

At the fourth grade level, 51 percent of the MSG teachers' responses were verbal while 84 percent of the FSG teachers' responses were verbal. Both categories of teachers showed a substantially higher rate of negative verbal and physical approaches to boys as compared to girls. However, the MSG teachers gave more positive physical and verbal reinforcement to the boys while the FSG teachers favored the girls.

Approximately 69 percent of the MSG teachers' interactions were positive as compared with only 34 percent of the FSG. These results are almost identical to those obtained at the second grade level. At both levels, the boys receive more reprimands than the girls by both the male and female success teachers. The male success teachers, however, give more positive reinforcement to the boys while the FSG teachers give their positive reinforcement to either the girls or the whole group. The primary difference between these two groups is that the MSG teachers are significantly more positive in their interactions.

FINAL EVALUATION SUMMARY

FINAL EVALUATION SUMMARY

During the three years of the study the objectives for evaluative purposes remained constant. These objectives have been described in the final narrative report as well as the detailed analysis contained herein for the third year evaluation. The following statements are generalized conclusions made by the project director resulting from analysis of the individual evaluations of each of the three years.

1. Objective--More Interest in Participating in Academic Subjects

With statistical consistency, the male-oriented classes did show more interest in attending school. Activities at home directly related to school stimuli did indicate more self-reliance and selection of activities reflected more maturity of development on the part of the innovative group.

It can be then assumed that with a change in activities and environment toward more "male-oriented" tasks, expectations and attitude, the interest in school by young boys can be greatly increased. Such expedites development of self-reliance, healthy self-concept and maturity in viewing own role at home and in the school community.

2. Objective--Greater Academic Skills

KINDERGARTEN

At the kindergarten level consistently the achievement level of the all male class was superior to that of the other groups on the Wide Range Achievement Test. Such significant difference did not occur in the Metropolitan Readiness Test results. The groups were found to be equal.

It should be noted that there has been a definite "spin-off" affect district wide resulting from this program and teacher inservices incorporated as a part of this program.

A very positive narrowing of the gap between boys and girls in their readiness for first grade has transpired. Such has been consistent and "held" during the time of this study.

METROPOLITAN READING READINESS TEST

RESULTS: 1967 - 1972. Mean percentile score comparisons by total district, total district boys and total district girls.

YEAR	BOYS MEAN PERCENTILE SCORE	GIRLS MEAN PERCENTILE SCORE	DISTRICT MEAN PERCENTILE SCORE
*1967-68	60%	66%	63.4%
1968-69	64%	66%	65%
**1969-70	67%	71%	69%
1970-71	74%	74.7%	74.3%
1971-72	76.6%	80.3%	78%

* First year of new test adoption administered in April of each year.
** First year of male-oriented program.

FIRST GRADE

It had been hypothesized that the male-oriented group would show academic skills as least as great as those of the nonmale-oriented classes. Such did not prove to be true.

At the end of the second year it was speculated that, perhaps, lack of experience on the part of the teacher depressed the evaluative results. This first grade phase was thus replicated.

The results indicate no significant difference but the mean scores are more favorable for the control (nonmale) group.

It can be assumed that in the area of academic skill acquisition instructional environment does not influence success or failure to the degree anticipated other than the environmental influence on attitude and self-concept and its relationship to positive and negative attitudes toward learning. This in itself is not to be dismissed as inconsequential. It's measurement though objectively is extremely difficult to obtain.

3. Objective--More Oral Participation

Consistently, there has been no significant difference in the area of verbal fluency, one of the identified weaknesses of the young male child. One might speculate, then, that the early development of verbal skills by the female child may serve as a model for boys rather than an inhibitor.

4. Objective--More Growth in Ability to Use Large and Small Muscles

Small Muscle Development--Consistently, the all male kindergarten groups showed a higher performance level in this area, though the results were not statistically significant. The follow-up one year later indicates the acceleration of kindergarten did not hold. At first grade level these skills showed greater in the control group. The relationship of these skills to the acquisition of reading, writing and spelling and the need for accelerated development at the kindergarten level does not seem as imperative for children free of learning disabilities as might be speculated.

Large Muscle Development--The results in this area have consistently remained positive and need no further comment.

5. Objective--Factors in Teacher Behavior Influencing School Success for Boys

This objective has, perhaps, more than any other served to identify those factors that constitute the definition "male-oriented," as defined in this project. This

objective was only entered into the study the third and final year. The evaluative results are herein the detailed analysis. It is then appropos at this point to provide the definition resultant from the evaluation and frequent classroom observation by an experienced observer of many years. The definition is comprised of those teacher factors that differ from what is usually found in the "traditional" classroom.

A male-oriented environment consists of:

a. a more physical contact between teacher and pupil;
b. higher noise level;
c. a more frequent change and overlapping of activities;
d. the teacher frequently doing what the pupils do rather than assuming the posture of observer and overseer;
e. show and tell, language development and topics for units capitalize on "boy interests" as does work time materials and activities;
f. for broader standards of acceptable behavior as long as it is productive as opposed to disruptive;
g. the teacher frequently becoming a part of the group and letting pupils become "teacher".

Or succinctly, teacher attitude and acceptance that there is a basic neurological and psychological difference in the developmental patterns of the male child and an understanding of these differences are paramount if his academic experiences and acquisitions are to be positive and successful.

APPENDICES

APPENDIX A

SHORELINE PUBLIC SCHOOLS

Instructional Services Division
January 18, 1972

Dear Parent:

The Shoreline School District is interested in obtaining your opinion on several items pertaining to your son's activities outside the classroom. As a part of this interest, we are asking your aid in recording opinions on the following questions.

Please complete the questionnaire as soon as possible and return it in the enclosed self-addressed envelope. Thank you for your cooperation.

Sincerely,

Margit Augustine

Principal
Parkwood Elementary School

1. In your opinion, the classroom program that your son is involved in is:

Far better than most ____
Better than most ____
Same as most ____
Not as good as most ____
Far worse than most ____

2. Your son reports to you on his school activities:

Daily ____
Three or four times a week ____
Once or twice a week ____
Once every two or three weeks ____
Never ____

3. Children in various ways sometimes show reluctance in attending school. For example, they say they don't want to go: they may say they want to do something else: they may not cooperate in getting themselves ready on time. How frequently does your son show such reluctance in attending school?

Never ____
Once every two or three weeks ____
Once or twice a week ____
Three or four times a week ____
Every day ____

4. Children in various ways sometimes show eagerness or enthusiasm to attend school. For example, they may say they can't wait to go: they may be ready and waiting to go before it is time: they may talk enthusiastically about what they will do when they get there. How frequently does your son show such eagerness?

Never ____
Once every two or three weeks ____
Once or twice a week ____
Three or four times a week ____
Every day ____

5. Listed below are activities that children in the primary grades may engage in from time to time. For each activity please rate the frequency that best describes how often your son engages in the activity.

	Never	Once every two or three weeks	Once or twice a week	Three or four times a week	Every day
Colors, draws, paints	___	___	___	___	___
Watches TV	___	___	___	___	___
Plays with a ball with a family member or friend	___	___	___	___	___
Cuts and pastes	___	___	___	___	___
Asks to be read to	___	___	___	___	___
Builds or puts together his own playthings	___	___	___	___	___
Initiates contact and activities with friends	___	___	___	___	___

6. Please list three activities that your son engages in that have not been previously mentioned in question #5. Please specify any such activities you think of and rate the frequency of each.

	Never	Once every two or three weeks	Once or twice a week	Three or four times a week	Every day
a.					
b.					
c.					

7. Please list below, up to five activities or projects which your son has participated in at school.

a.

b.

c.

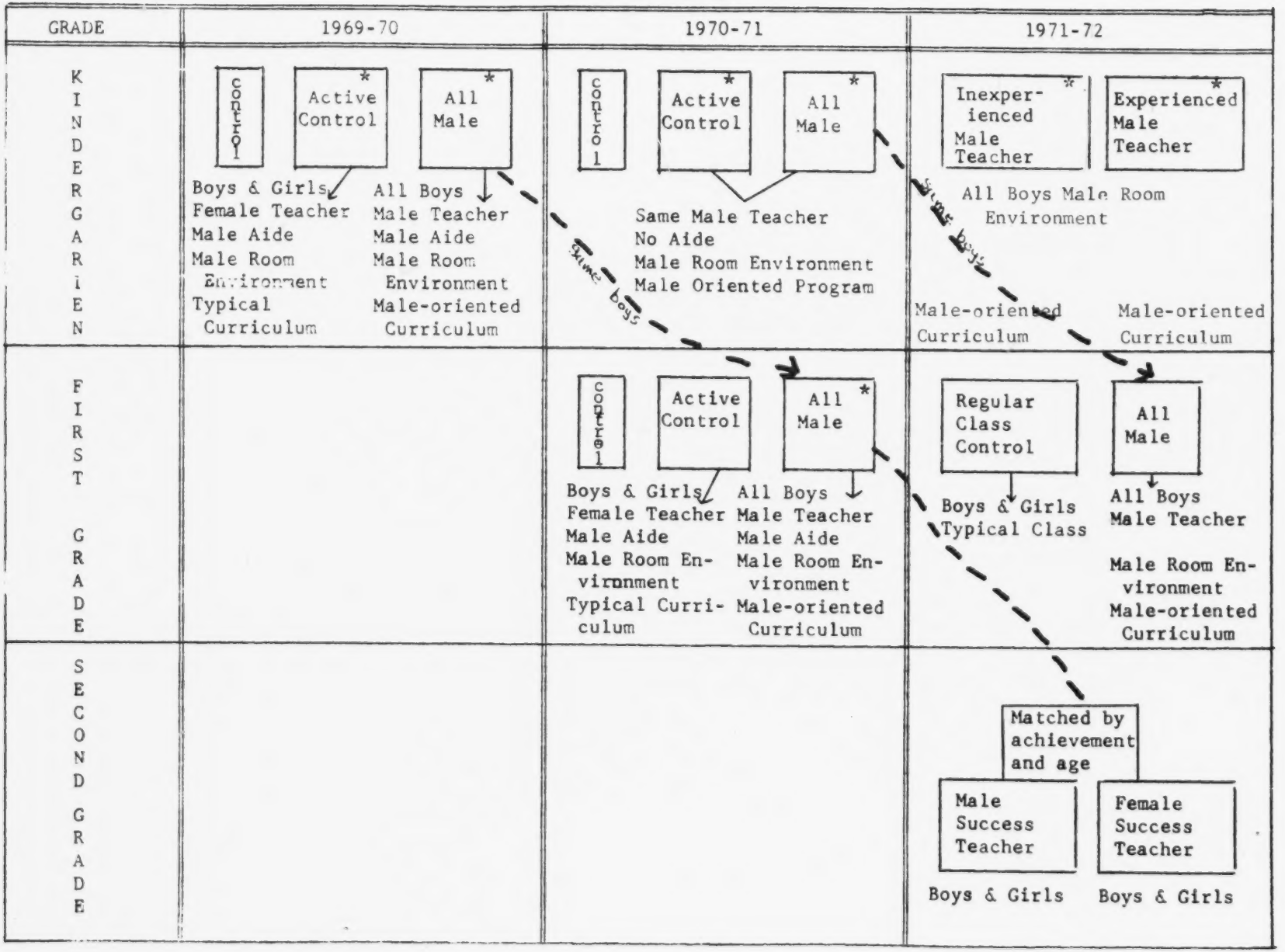
d.

e.

8. Please feel free to make any comments concerning this questionnaire or your child's program.

APPENDIX B

INNOVATIVE CLASSES*



*Some boys in the Active Control and All Male classes in 1969-70 and 1970-71 were not in innovative classes in 1971-72.

ED 079654

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FINAL REPORT OF TITLE III--STATE PROJECT NO. 17-412-70-431

MALE-ORIENTED PROGRAM FOR BOYS--1969-1972

SHORELINE PUBLIC SCHOOLS NO. 412

Superintendent--Dr. William G. Stevenson
Assistant Superintendent,
General Administration--Dr. William Reiss
Project Directors--Dale N. Boyer (1969-71)
Dorothy M. Revelle (1971-72)

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Submitted: August, 1972

Shoreline School District No. 412
N.E. 158th & 20th Avenue N.E.
Seattle, Washington 98155

Prepared by: Dorothy M. Revelle, Project Director

CG 008 133

PART I--NARRATIVE REPORT

A. ABSTRACT

A three year federally funded (Title III) innovative program was undertaken in the fall of 1969. This program had as one of its basic purposes the identification and establishment of curriculum and program design which would build on the strengths of the young male child while it sought to help him overcome his weaknesses. The second major purpose was to attempt to discover or identify those teacher behaviors that produce the best results with boys.

It has been established that boys tend to have a more difficult time in school than girls, both in terms of academic achievement and behavioral adjustment. Such has been documented in the research of Patricia Sexton as by others.

The characteristics and strengths commonly found in boys are initiative, assertiveness, spatial and analytic ability. It is suspected that, especially in primary grades, expectations of pupils tend to be female oriented. Thus there are not the same developmental opportunities for these "male" qualities as for "female" qualities in which the male child initially is weak.

Girls tend to exceed boys in verbal skills, large and small muscle coordination and, because of initial successes, higher interest in school. Additionally, if primary grade expectations are female oriented, an additional dynamic causes the male child to manifest less interest and motivation in school.

Thus the thrust of this program was toward a "male-oriented" environment in attitude, curriculum and materials. Initiation began with a male teacher, male-aide and all male class. While curricular concepts per se were not changed, the instructional media, activities and classroom climate were considerably manipulated.

Objectives for purposes of evaluation were aimed directly at the weaknesses previously stated. (See paragraph 4) Evaluation instruments were objective in design or forms of standardized measurements. Each year some minor directional or organizational changes were made but the initial objectives remained constant.

A continuous appraisal of method and material was inclusive in the teacher observations of those both within and not of the program and anecdotal information was recorded. Such enabled conclusions to be incorporated into the development of a Curriculum Resource Guide containing material and methods that have been found to particularly motivate boys. The Curriculum Resource Guide is part of the exportable package. Additionally, video tapes giving an overview of the project and samplings of instruction in given subject areas were made. (See attached list for specifics, APPENDIX D)

Wide dissemination of the project occurred through newspaper and magazine articles, teacher inservices, speaking engagements and the like.

In the main, it is felt by all who have been involved and/or affected by this field study that much has been documented in the form of evidence supporting or negating original hypotheses, a greater awareness of the differences, neurologically and psychologically, between boys and girls and their learning developmental patterns has been acquired and a "spinoff" affect of competition felt by primary female teachers has had obvious and measurable affect on all boys district-wide.

B. COMMUNITY

The applicant school district is a suburban residential area in County of King, Washington. It is approximately 18 square miles, extending from the northern city limits of Seattle, Washington to the southern border of Snohomish County, Washington. The community is composed of about 10,000 families with a total estimated population of 70,000. The school community has a total pupil population of approximately 16,300, of which 7416 are elementary.

PART II--PROGRAM DESCRIPTION

A. SCOPE OF THE PROGRAM

1. Personnel

Originally, the project started with a project director and clerical assitance, male project teacher (K) and male aide, an active control female teacher (K) with male aide, and a regular control female teacher (K), no male aide. Additionally, there was an evaluation psychologist, trained teacher observers and certificated evaluator.

Throughout the course of the project, there remained the project director, evaluation psychologist, trained observers and certificated evaluator.

During the second year added to the original personnel was an exact duplicate of classroom personnel at the first grade. The one difference was the transference from kindergarten the support male aide to grade one. Pupils in the original all male kindergarten remained intact and were placed in the all male first grade.

The third and final year classroom personnel consisted of two male kindergarten teachers, two first grade teachers, one female control and one male innovative and two second grade female teachers receiving the male pupil population from the original group.

As to classroom personnel, there was no cost to the project except for release time and extended time plus the male aide. It involved simply a redistribution of pupils and teachers.

2. Statement of Needs

a. Educational and Cultural Facilities Available

The educational facilities in the applicant school district included the public school system--grades K through twelve, a two-year state-supported community college, and five private or parochial schools. The public school system consisted of nineteen elementary schools, four junior high and two senior high schools. A fifth junior high will open in the fall of 1969. This did change the last year (1971-72) due to Special Levy failure.

Extensive cultural facilities, such as concert halls, museums, opera houses and coliseums are not available within school district boundaries but are within easy driving distance in nearby Seattle. There are three small public libraries within the school district boundaries. There are no public swimming pools and recreational facilities are meager.

b. General Needs

The Shoreline community, not unlike many others, presents an environment in which boys have difficulty in observing models of what it means to be a male. The suburban father, unlike the rural father, has his business away from the home and his home activities are often indistinguishable from those of the distaff side. The number of fatherless families--there are forty at North City Elementary alone--further limits the presence of the male image.

Guidance referrals substantiated our community's needs for this program. The seventy percent referral of boys and thirty percent referral of girls at North City Elementary, for example, is a pattern that persists throughout our elementary schools.

There is a need for some district to make inroads into the education of boys. Shoreline was willing and able to provide the staff that would attempt to make these inroads.

There are social, psychological, physical and institutional factors which hinder boys in American education. "Nearly two-thirds of all grade repeaters are boys; more boys than girls, by a huge margin, are underachievers and poor readers; three times as many boys as girls develop stuttering problems." (Peltier, 1968, p. 182) At least twice as many boys are reported to principals for learning problems and behavior disorders.

There are two reasons for the difficulties the boys have. One is that boys <u>are</u> different from girls. The other is that with so many women teachers in elementary schools, the curriculum and behavior expectations tend to be female oriented.

That boys are different from girls in more than physical characteristics has been documented in a recent book, edited by Professor Eleanor Maccoby of Stanford University--<u>The Development of Sex Differences</u> (1966). Over 900 studies on sex differences were studied with the following conclusions:

(1) General Intelligence--No difference.

(2) Verbal Ability--Preschool and early school, girls exceed boys. Reading below age 10, girls exceed boys. Throughout school, girls do better on tests of grammar, spelling and word fluency.

(3) Number Ability--Girls count earlier. No difference in computation. Boys exceed girls on arithmetic reasoning in high school.

(4) Spatial Ability--Boys exceed girls.

(5) Analytic Ability (Field independence as well as grouping)--Boys exceed girls.

(6) Creativity--Ability to restructure a problem--Boys exceed girls; Verbal divergent thinking--Girls exceed boys.

(7) Achievement--Girls get better grades than boys.

In addition to these intellectual characteristics, boys to not behave the same as girls. Many women teachers tend to react negatively to boys' natural behavior. "Even though frequently unaware of it, many of these women teachers value neatness and cleanliness above individual initiative. They prefer conformity, mental passivity, and gentle obedience (at which girls excel) to the aggressive drive and originality of many boys." (Pollack, 1968, p. 22)

To provide appropriate role models, most educators agree on the need for more men teachers in the elementary school. (Peltier, 1968; Pollack, 1968); and this would seem to be especially applicable to younger children. "The preschool child is probably at the best age to benefit from benign male influence, for it is at this age that he is forming his basic attitudes toward the world and the people in it." (Kyselka, 1966, p. 32)

Even with a man teacher, the boys are at a disadvantage when competing with girls of the same age. "They lag a year or more behind girls in physical development. By the time they start school, even their hand muscles are markedly less mature." (Yolles, 1967, p. 64) One successful experiment in having separate classes for boys and girls has been in the Wakefield Forest Elementary School in Fairfax County, Virginia. Findings indicated that not only did the boys do better than control groups in their academic work but they also became much more interested in school. (Yolles, 1967) Other advantages found were "a decline in discipline problems and the facts that students were happier, that attendance was better, and that students were more willing to ask questions and participate in class activities." (Peltier, 1968, p. 184)

It is not enough, however, merely to separate the boys. Their curriculum must also be built around their needs; that is, it must build on their strengths and help develop their weaknesses. For example, in the Fairfax project the boys' curriculum included "more active physical games which involve noise and muscle movement and are based on a transportation theme." (Pollack, 1968, p. 25) Peltier suggests classes which are "more masculine in tone, more exploratory in nature, and more activity oriented." (1968, p. 184)

Thus initially the program was designed to provide a male teacher, with the help of male aides, using a male-oriented curriculum in an all male

kindergarten class. Since men of the type required for this work continue to be difficult to find, it was necessary to have inservice training sessions after a successful year of the program. These served a dual purpose--one, to help female primary teachers acquire the concepts necessary to include the boy-oriented curriculum in their teaching and, two, to encourage more male teachers to work at the preprimary and primary level.

c. Financial Inadequacy

Shoreline is a suburban school district which is residential rather than industrial in composition. Most neighboring school districts are experiencing a period of rapid industrial expansion which results in increasing amounts of property tax monies for all government services, including those costs associated with meeting school enrollments. A "bedroom" district like Shoreline must face the costs of rapid increases in enrollments without the benefit of large increases in property tax revenues from industry.

Because of the nature of the tax structure of the State of Washington, most school districts must seek approval annually of special levies for support of the regular educational program. In this respect, Shoreline must certainly seek a higher percentage of its financial support. (It takes two and one-half times the effort in special levy mills to raise the same amount of dollars in Shoreline as it does in the Seattle Public School System.)

Shoreline's per-pupil expenditure is comparable to similar suburban school districts in this area of the state. To keep in this position, Shoreline has had to maintain annual special levies up to the present 55 mills beyond the basic 14-mill statutory level for schools.

With the continual struggle for minimal financial support, it would have been very difficult for Shoreline to establish model and/or innovative programs without some financial assistance from external resources.

3. Procedures

a. Personnel Selection

Director--Selection was made from personnel whose prior experience indicated administrative and organizational skills of high quality, competency in curricular and instructional approaches, strong identification with the male child and high interest in the project.

Classroom Teachers--Selection for the innovative groups were men whose

teaching performance indicated above average competencies, who had no prior primary experience, who also, had a high interest in the project.

Others involved met the criteria for evaluative purposes and were interested in participating in the project.

Evaluation Psychologist and Certificated Evaluator--These were selected from personnel known to the district who possessed the necessary skills and whose other assignments were not a full time contract, permitting these persons to devote undivided time to the project.

Teacher Observers--Built into the budget was a provision for auxiliary personnel who brought to the collection, analysis and compilation of data their particular expertise which, obviously, does not exist within any one person. This auxiliary personnel included half-time release for the male kindergarten teacher. He brought to the total input the practicum and everyday evaluation of the actual reaction of the boys.

During the first year of the project graduate students from the University of Washington were used in gathering evaluative data. Feeling the need for greater continuity of personnel and greater flexibility of time schedules, the project director decided to use women from the local area. The ones selected were known to the director and auxiliary personnel, had children attending Shoreline schools but none of which were in the schools involved in the project. All had worked previously either in a professional capacity or volunteer service. Four, which is the number selected, have continued to be on call through the project from September, 1970 through the project compilation this June, 1972.

Video tapes, discussions, demonstrations and trial sessions in rooms not included in the study were among the methods used to train these observers. In the main, they collected most of the data under the supervision of the evaluation psychologist.

b. Personnel Duties

Director--besides the regulatory duties of all Title III project directors:

(1) Had direct responsibility for hiring and supervising all personnel except classroom teachers who were selected from "in-house".

(2) Purchasing.

(3) Communication with parents and schools involved.

(4) Overall planning and implementation of inservices.

(5) Sharing classroom observations with appropriate district personnel.

Evaluation Psychologist:

(1) Supervised, scheduled and organized collection of raw data.

(2) Assisted in selection of evaluative instruments and training of teacher observers.

(3) Worked directly with certificated evaluator in preparing for statistical year end evaluation project.

Certificated Evaluator:

(1) Received raw data, compiled and interpreted it.

(2) Prepared yearly Evaluation Report.

Other personnel duties are either obvious or have previously been described herein.

Additional procedures for recall of personnel, class assignments, collection of data, etc. were sequenced out for each year in August and September. Periodic meetings were held so that all members of the project were involved and informed throughout the year.

4. Budget

See attached copies, APPENDICES A, B, C.

B. EVALUATION

See attached separate copy.

C. RECOMMENDATIONS

For other districts who may desire to attempt similar plans, the following are recommended:

1. A PERT schedule should be well developed and far in advance of the actual implementation.

2. A district-wide factor needs to be planned for. Our attempt was never to prove men teachers, ipso facto, will improve the learning of boys as an example.

3. A pre-school inservice for personnel involved should be planned far enough in advance so that directions, space, equipment, etc. become a joint effort with plenty of "percolating" time.

4. In preparing men for early primary teaching, internships are not recommended unless such can occur under another male teacher.

5. A year or two of experience, per se, at the primary level for men teachers is wise before involving them in the all male approach.

APPENDICES

A - C BUDGET

D TAPE BIBLIOGRAPHY

E MATERIALS LIST

EA Form 43-A, 12/68

APPENDIX A
State of Washington
SUPERINTENDENT OF PUBLIC INSTRUCTION
Olympia

PROPOSED BUDGET SUMMARY/EXPENDITURE REPORT OF FEDERAL FUNDS

NAME & ADDRESS OF AGENCY	PROJECT NUMBER	GRANT NUMBER	FEDERAL TITLE DESIGNATION
Shoreline District #412 N.E. 155th & 20th N.E., Seattle, WA 98155			III

PART I - EXPENDITURES (other than construction)

(Check one) [X] Proposed Budget Summary (Attach Detail Schedules) [ ] Estimated Expenditure Report [ ] Final Expenditure Report

Budget Period (Mo., Day, & Year) Beg: 6/15/69 End: 6/14/70

FUNCTIONAL CLASSIFICATION	State Manual Acct. No.	Salaries: Professional Obj. 1*	Salaries: Non-Professional Obj. 2&3	Employee Benefits Obj. 4	Supplies & Materials Obj. 5	Contracted Services Obj. 7	Travel Obj. 82&83	Capital Outlay (Under 2000) & Equip. Obj. 92&97	Other Expen. Obj. 6,	TOTAL EXPENDITURES	NEGOTIATED BUDGET
1	2	3	4	5	6	7	8	9	10	11	12
ADMINISTRATION	100				774.50	250.00	190.00	209.00		1,423.50	
INSTRUCTION	200	14,843.55	4,193.39	1,295.00	659.65	900.00	454.00	1,031.41		23,377.00	
ATTENDANCE--PUPIL SERVICES	300										
FOOD SERVICES (900)	400										
PUPIL TRANSPORTATION SERVICES	500								199.50	199.50	
OPERATION OF PLANT	600										
MAINTENANCE OF PLANT	700										
REMODELING UNDER $2,000 (1220C)	73-9										
COMMUNITY SERVICES (1100)	800										
PAYMENTS TO OTHER DISTRICT	900										
NON-WARRANT EXPENDITURES	970										
TOTAL		14,843.55	4,193.39	1,295.00	1,434.15	1,150.00	644.00	1,240.41	199.50	25,000.00	
NEGOTIATED BUDGET										XXXXXXXX	

* Object codes taken from State Accounting Manual - (one or two digits)

FBA Form 43-A, 12/68

State of Washington
SUPERINTENDENT OF PUBLIC INSTRUCTION
Olympia

PROPOSED BUDGET SUMMARY/EXPENDITURE REPORT OF FEDERAL FUNDS

NAME & ADDRESS OF AGENCY	PROJECT NUMBER	GRANT NUMBER	FEDERAL TITLE DESIGNATION
Shoreline School District #412 N.E. 158th & 20th N.E., Seattle, WA 98155	17-412-69-431	92210271-29	Title III ESEA

PART I - EXPENDITURES (other than construction)

(Check one) [X] Proposed Budget Summary (Attach Detail Schedules) [ ] Estimated Expenditure Report [ ] Final Expenditure Report

Budget Period (Mo., Day, & Year) Beg: 6/15/70 End: 6/14/71

FUNCTIONAL CLASSIFICATION	State Manual Acct. No.	Salaries: Professional Obj. 1*	Salaries: Non-Professional Obj. 2&3	Employee Benefits Obj. 4	Supplies & Materials Obj. 5	Contracted Services Obj. 7	Travel Obj. 82&83	Capital Outlay (Under 2000) & Equip. Obj. 92&97	Other Exper. Obj. 6,	TOTAL EXPENDITURES	NEGOTIATED BUDGET
1	2	3	4	5	6	7	8	9	10	11	12
ADMINISTRATION	100				750.00		150.00			900.00	
INSTRUCTION	200	10,405.00	3,900.00	985.00	815.00	745.00	50.00	800.00		17,700.00	
ATTENDANCE--PUPIL SERVICES	300	800.00								800.00	
FOOD SERVICES (900)	400										
PUPIL TRANSPORTATION SERVICES	500										
OPERATION OF PLANT	600										
MAINTENANCE OF PLANT	700										
REMODELING UNDER $2,000 (1220C)	73-9										
COMMUNITY SERVICES (1100)	800										
PAYMENTS TO OTHER DISTRICT	900										
NON-WARRANT EXPENDITURES	970										
TOTAL		11,205.00	3,900.00	985.00	1,565.00	745.00	200.00	800.00		19,400.00	
NEGOTIATED BUDGET										XXXXXXXX	

* Object codes taken from State Accounting Manual - (one or two digits)

FBA Form 43-A, 12/68

State of Washington
SUPERINTENDENT OF PUBLIC INSTRUCTION
Olympia

PROPOSED BUDGET SUMMARY/EXPENDITURE REPORT OF FEDERAL FUNDS

NAME & ADDRESS OF AGENCY	PROJECT NUMBER	GRANT NUMBER	FEDERAL TITLE DESIGNATION
Shoreline Public School District #412 N.E. 158th & 20th N.E. Seattle, WA. 98155	Male-Oriented Program for Boys No. 17-412-70-431		

(Check one) ☐ Proposed Budget Summary (Attach Detail Schedules) ☐ Estimated Expenditure Report ☐ Final Expenditure Report

Budget Period (Mo., Day, & Year) Beg: 6/15/71 End: 6/14/72

PART I - EXPENDITURES (other than construction)

FUNCTIONAL CLASSIFICATION	State Manual Acct. No.	Salaries: Professional Obj. 1*	Salaries: Non-Professional Obj. 2&3	Employee Benefits Obj. 4	Supplies & Materials Obj. 5	Contracted Services Obj. 7	Travel Obj. 82&83	Capital Outlay (Under 2000) & Equip. Obj. 92&97	Other Expen. Obj. 6,	TOTAL EXPENDITURES	NEGOTIATED BUDGET
1	2	3	4	5	6	7	8	9	10	11	12
ADMINISTRATION	100										
INSTRUCTION	200	15,809.02	2,390.00	1,001.90	1,400.00	1,300.00	485.00	440.00		22,825.00	
ATTENDANCE--PUPIL SERVICES	300	2,500.00		135.00						2,635.00	
FOOD SERVICES (900)	400										
PUPIL TRANSPORTATION SERVICES	500				150.00					150.00	
OPERATION OF PLANT	600										
MAINTENANCE OF PLANT	700										
REMODELING UNDER $2,000 (1220C)	73-9										
COMMUNITY SERVICES (1100)	800										
PAYMENTS TO OTHER DISTRICT	900										
NON-WARRANT EXPENDITURES	970										
TOTAL		18,309.02	2,390.00	1,136.00	1,550.00	1,300.00	485.00	440.00		25,610.00	
NEGOTIATED BUDGET										XXXXXXXX	

* Object codes taken from State Accounting Manual - (one or two digits)

APPENDIX D

BIBLIOGRAPHY OF VIDEO TAPES

The following listing contains teacher training video tapes and classroom demonstrations in various subject areas for those desiring to implement "male-oriented" emphasis in kindergarten and first grade classes. These tapes are available to other school districts on a loan basis. A mailing charge will be required.

These tapes play only on a 1/2" Sony (2000 Series) VTR. Caution: These tapes will not play on the new format (J1) 1/2" machines.

The production of these tapes is part of the "Exportable Package" for Title III, E.S.E.A., Project #17-412-70-431.

x x x x x x

No. of Copies Available

1 — 16 mm film dubbed from T.V. tape of "What's New in the Schoolhouse"--Marty Camp Wilson, KOMO T.V., March, 1970.

1 — Video tape of the program "What's New in the Schoolhouse"--See above.

Both the film and tape give an overview of the intent for the program; the needs of boys and what the project hoped to accomplish.

CLASSROOM DEMONSTRATION TAPES

Kindergarten Level

1 — Combined tape of worktime and physical education. Demonstrates, among other obvious skills, development of small muscle coordination and eye-hand coordination.

1 — Combined tape of math and carpentry. Demonstrates counting by 10's visual memory recall of numbers, simple addition combinations, woodworking during "worktime".

1 — Combined tape of taking attendance, math, reading readiness. Demonstrates, besides the aforementioned, classroom climate.

First Grade Level

1 — Language, spelling and reading development through "Our News"--the everyday world of the child.

1 Combined tape of spelling with use of slates, a reading group and carpentry (woodworking). Demonstrates teacher-pupil, pupil-pupil interaction. Language skill development being one of the weaker areas of the male child, the use of slates is very appropriate. It provides training in auditory perception, visual memory recall with kinesthetic association and IMMEDIATE feedback to the pupil.

1 Science-electricity. Demonstrates inquiry approach; includes a summary of lessons; builds on prior learning.

TEACHER TRAINING TAPES

These tapes used in conjunction with classroom demonstration tapes provide the background and then actual classroom implementation of the "male-oriented" approach.

Kindergarten Teacher Inservice

A one day inservice for teachers. The following tapes are available.

Language Development
Dr. Theodore Glim, Assistant Superintendent
and Author of Reading and Spelling Series.

Nature of Boys
Dr. Marcia McBeath, School Psychologist

The Male-Oriented Kindergarten
Mr. Dean Baumgartner, Project Teacher

Neurophysical Activities
Mr. Paul Smith, Director of Physical Education

First Grade Teacher Inservice

A one day inservice for teachers. The following tapes are available.

Introduction and Background
Ms. Dorothy M. Revelle, Project Director

Nature of Boys
Dr. Marcia McBeath, School Psychologist

Language Development
Dr. Frank D. Love, Director of Curriculum and Instruction

Neurophysical Activities and Their Relationship to Learning
Mr. Paul Smith, Director of Physical Education

Summary--What Is "Male-Oriented"
Ms. Dorothy M. Revelle, Project Director

RESOURCE PERSONNEL

The following list of people are available for consulting service.

A. Program Organization and Maintenance

Mr. Dale Boyer, Project Director (1969-71)
Mr. Dean Baumgartner, Teacher

B. Psychology of Boys

Dr. Marcia McBeath, School Psychologist

C. Neurophysical Activities and Their Relationship to Learning

Mr. Paul Smith, Director of Physical Education

D. Neurophysiological Aspects of Learning

Ms. Dorothy M. Revelle, S.L.D. Consultant

With the exception of Mr. Dale Boyer, all of the above may be contacted through Shoreline Public Schools Administrative Offices. Mr. Boyer is now with Bellevue Public Schools.

APPENDIX E

SOME OF THE MATERIALS USED IN THE MALE-ORIENTED PROGRAM FOR BOYS IN KINDERGARTEN

wire strippers
flashlight batteries - size C and D
copper wire (light)
#13 lightbulbs (G.E.)
lightbulb sockets
knife switches
buzzer (electrical)
alligator clips
magnets - bar, horseshoe
iron filings, nails, ferrous and nonferrous
metals, clay, etc.
containers - various volumes and shapes
flasks, rubber stoppers, tubing
tin cans (ditto fluid cans)
candles
propane torch, alcohol lamp
work benches
wood vices
saws (coping, hand cross-cut), hammers, drills, files, wrenches
nails - 2D, 4D, 6D, 8D, box
nails - 2D, 4D finish
screws - assorted
wood - scraps - 1x2, 1x4, 1x6, 2x4 soft wood (pins, spruce, cedar)
plywood sheets - 1/4", 3/8", 1/2", 5/8", 3/4"
old packing crates - cardboard
dowell - wood - as large as possible
sandpaper
hammer and nail sets - playschool
puzzles - more advances
toy truck - wood, heavy duty flat bed
stay-put block set (bolts together) expensive
Play School cardboard blocks
blocks made from 3/4" plywood - various shapes and sizes - multiples of each other
Play School wood train set
old upright typewriters - working condition
Lego set (with wheels)